

'It's Important to Know In Time'

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Electric Heating Appliances Will Be Hit By April

Manufacturers See Delay In Enforcing Order on Chromium Wire Use

WASHINGTON, D. C.—Existing orders and regulations reported to be in preparation will eliminate the manufacture of new electrical heating appliances of all kinds for homes after April 1, in the opinion of government officials as well as members of the industry here.

Responsible are restrictions invoked by the Office of Production Management in order to conserve existing supplies of chromium, nickel, and other scarce materials required for defense, which also are essential to heating appliance production.

An OPM order forbidding the use of chromium and other materials in the production of alloy steels for any but defense orders enjoying a preference rating of A-1-j or better is said to be rapidly bringing operations in the industry to a standstill, since it deprives producers of nickel-chromium wire essential for heating appliances.

Members of the industry have presented a petition to OPM, asking it to grant them enough wire to complete goods already in inventory, assuring officials that by April 1 they will have completed production of goods in process and be in a position to convert their industry to wartime production. Manufacturers' inventories, OPM officials agree, are of normal proportions.

G-E Plans Retailer Forum Sessions on Wartime Problems

BRIDGEPORT, Conn.—Because General Electric Co. is now more than ever interested in exchanging ideas with its appliance retailers, open forum discussions will highlight the second annual National Retail Development League conventions in Commodore hotel, New York City, Jan. 26, 27, and 28; and Drake hotel, Chicago, Feb. 3, 4, and 5.

Dates and theme of the conventions were announced by Jean DeJen, national president of R.D.L., General Electric Co., Bridgeport.

The Retail Development League, a national organization of General Electric appliance retailers and sales-

Westinghouse Prices Start at \$149.95 In New York Area

NEW YORK CITY—Westinghouse 1942 electric refrigerator prices for this area (Zone 2) start at \$149.95 for the "leader" 7-foot model. All 6-foot and smaller units have been dropped from this year's line.

Three equipped "sevens" are offered at prices of \$164.95, \$179.95, and \$204.95, respectively, and two 9.3-cu. ft. units are offered at \$204.95 and \$249.95.

Suggested retail prices of Westinghouse 1942 electric ranges start at \$119.60 for the "base" model, and go as high as \$286 for the top model in the series. In between are three models at \$152.25, \$209.25, and \$232.50. Price of the 1941 "leader" range was \$99.95.

Takes Over a Job



GLENN GUNDELL

Gundell Heads G-E Advertising; Bullock Is Called By Army

BRIDGEPORT, Conn.—Major Boyd W. Bullock, advertising manager of General Electric Co.'s appliance and merchandise department, will go into active army service Feb. 15. He will report at the Infantry School, Ft. Benning, Ga.

Glenn Gundell, who has been assistant to the advertising manager, now becomes assistant advertising manager, and will be in charge during Major Bullock's absence.

(Concluded on Page 2, Column 2)

New Ice Cube Tray Uses Plastic Cups

DETROIT—A revolutionary type of plastic ice cube tray, trade-named Sani-Tray, has been introduced into the household refrigerator market by the Swift Mfg. Co. of Detroit.

Individual plastic cups are held in a steel rack or tray, which is being produced now to fit most evaporator sizes.

Features of this latest development in ice cube trays, in addition to the successful application of a plastic, are that the individual cups may be lifted from the tray without levers or removing the tray entirely from the evaporator.

Ice cubes are quickly extracted from the flexible cups by slight pressure on the cup sides or bottom, a characteristic which has certain values from a sanitary standpoint, as well as from the convenience

(Concluded on Page 3, Column 4)

Radio Industry Ordered To Slash Production 40% In Next 90 Days

WASHINGTON, D. C.—The War Production Board last week directed radio and phonograph manufacturers to curtail their output for civilian use by nearly one-half during the next three months, and indicated that the major companies within the industry soon would be on a 100% war production footing.

Limitation Order L-44, issued by Acting Priorities Director J. S. Knowlson, provides for an average monthly curtailment in production during the next 90 days of more than 40% below the monthly production during the nine months ended Sept. 30, 1941. Similar cuts were ordered in the number of tube sockets in the sets produced, which will result in corresponding curtailment of the number of tubes used in new sets.

The order does not affect production for certain government defense agencies, besides the Army and Navy, nor for lend-lease requirements, police departments, or similar

Three Types of Steel Substitute For Copper Tubing Described

Special Problems Are Faced In Use of Any Types Thus Far Developed

CINCINNATI—The refrigeration industry will have to do without copper for the duration of the war. This is the considered opinion of members of the Cincinnati section, American Society of Refrigerating Engineers who met here last week at Hotel Gibson to discuss the current copper situation.

The meeting uncovered some interesting details of the work that has been done to develop copper substitutes in refrigeration work.

Because Otto Klopsch, vice president, Wolverine Tube Co., Detroit, was unable to attend the meeting, J. W. Craig of Crosley Corp. led the group's discussion of the copper situation. J. H. Elliott, chairman of the Cincinnati section presided at the meeting.

Mr. Craig read a recent statement by Mr. Klopsch which revealed that the war will require five million tons of copper—with only three million tons in sight for use through 1943. This situation has resulted in a

tightening of restrictions on copper by OPM—with metal in process held up in manufacturing plants.

Copper in the hands of the automobile industry—one of the country's largest users, will be re-melted and re-assigned to war use. Copper scrap is being carefully segregated and graded for re-use by brass mills and copper refining plants.

One potential point of relief from the copper shortage is the development of steel cartridge cases which is now in progress. It is still quite possible, the Klopsch statement points out, that some refrigeration equipment now covered by priorities may have to be curtailed.

Discussing the Klopsch statement Mr. Craig pointed out that while there were plenty of substitutes for copper in the refrigeration industry, the metal was still needed for motors and wiring.

Rupert Cox of Crosley Corp. presented his findings concerning the

(Concluded on Page 12, Column 3)

Congress 'Embarrassed' By Rumors of New Higher Excise Taxes

WASHINGTON, D. C.—Treasury officials pointed out last week that any attempts to "outguess" the House Ways and Means Committee as to what new levies, if any, are in prospect for refrigerators and other appliances would not only prove embarrassing to the committee, but would do the trade itself no good. One recent rumor had it that an excise tax of as high as 35% was in prospect for refrigerators and radios.

There can be no verification of any such reports of proposed appliance excise tax increases, it was pointed out, for the reason that Treasury experts and other concerned with the problem are not divulging information as to what sections of the Revenue Act are being considered for upward revision, and how much the new rates will exceed those now in effect.

Any action taken by Congress will not be applicable to any excise tax filed prior to July 1, in any event, it is considered highly likely that no new bill will be finally approved before next fall.

Roe Directs Crosley Distribution Setup

CINCINNATI—Appointment of Ben T. Roe as manager of distribution of the manufacturing branch of Crosley Corp. has been announced by R. I. Petrie, vice president and general manager. Mr. Roe will have direct supervision of the field activities of the company's district sales managers throughout the country and their contacts with distributors.

He joined the Crosley organization in July, 1940, as western sales manager, and was later made manager of the major stores division, from which position he was promoted to his new appointment.

Previous to joining Crosley, Mr. Roe had been sales manager of Universal Cooler Corp., and before that for a number of years eastern district manager of the Leonard division of Nash-Kelvinator Corp.

Big Stores Ready For 'War' Roles

NEW YORK CITY—Retailers are ready to go all-out in their cooperation with the government's war production program, despite the restrictions which it may impose upon their customary methods of doing business. In contrast with past years, when sessions centered on problems of salesmanship, stock control, etc., this year's convention of National Retail Dry Goods Association was concerned with two main problems:

(1) How can the retail business best cooperate with the government to help win the war?

(2) How can the retailer best serve the customer during this period of many shortages?

Adding to the "emergency" character of the meeting was the presence and participation of government officials at all of the general sessions and round-table conferences. Officials present included Robert R. Guthrie, chief of the textile, clothing, and equipment branch of OPM; Walter F. George, U. S. Senator from Georgia; G. F. Brady, materials consultant to OPM; Lessing Rosenwald, chief of the industrial conservation section of OPM; A. A. Berle, assistant secretary of state, and others.

Price control and consumer credit problems arising from increased

(Concluded on Page 2, Column 4)

Industry Status Left In Doubt By Capital Changes

'Freezing Order' Is Just 'A Rumor'; Meeting Off On Commercial Order

WASHINGTON, D. C.—Abolition of the OPM and establishment of the War Production Board has temporarily clouded the picture of the future course of both the household and commercial divisions of the mechanical refrigeration industry.

Rumors were circulated widely not only here but throughout the trade in all parts of the country last week of a "freezing order" on stocks of new household refrigerators similar to that imposed on automobiles. This order was supposed to go into effect Monday, Jan. 26, but a check late Monday afternoon with an authoritative source in the capital failed to disclose any official basis for the rumor.

Another story that was making the rounds and which even hit the wires of one of the national press services was to the effect that a decision had been made as to the manufacturer or manufacturers "that would be permitted" to make refrigerators in the future. This too, seems to have been only an "idea" thrown out by one of the many government "experts."

Household refrigerator manufacturers were meeting Monday, Jan. 26 with the Industry Operations Division of the WPB, and following this meeting there may be some announcement that will clarify the situation in the household refrigerator field.

Meeting scheduled for this week of the Formal Refrigeration and Air Conditioning Advisory Committee with government officials, at which it was hoped that a decision on the repair parts and commercial refrigeration order would be obtained, has been postponed indefinitely, a Washington source declared.

Declaring that there were "some things in the proposed commercial order that didn't make sense," this source declared that the meeting wouldn't be called until "we have a real program for the industry."

Nelson Explains Setup Of Production Board

WASHINGTON, D. C.—On Jan. 21 Donald M. Nelson, head of the War Production Board and chief of all war production effort, abolished the Office of Production Management as such, and established new divisions of his office to handle OPM's functions.

This means that some of the plans for various industries, including refrigeration, which were worked out by the OPM, will be delayed until the new machinery is functioning.

Purpose of the new setup, Mr. Nelson explained, is to speed up the War effort. "Hard hitting" executives have been placed at the head of each of the six major divisions, and while they will avail themselves of the expert advice which industry and labor committees may give them, their decisions will be final.

"Debating societies are out," Mr. Nelson said. "We are going to have action."

While the organization is an "interim affair," to operate while the new production chief perfects plans for a permanent setup, he implied that the arrangements outlined will be changed only if circumstances warrant it.

The major divisions, which with

(Concluded on Page 2, Column 3)

"MOISTURE'S MASTER"
DAVISON'S
SILICA GEL
—USED IN ALL WELL-KNOWN DRYERS
YOUR JOBBER CAN SUPPLY YOU

KEROTEST
REFRIGERATION
VALVES AND FITTINGS
Serve at Home
KEROTEST
MANUFACTURING CO.
PITTSBURGH, PA.

Penn Says:
Servicing commercial
refrigeration equipment
is vitally important
NOW. You can de-
pend on Penn Controls.
PENN ELECTRIC SWITCH CO.
GOSHEN, IND.

EASY TO SELL!
More than 20 years of high rep-
utability...in every kind of refrig-
eration service...has established
the name "Lipman" as a BUY
word that breaks down sales
resistance. Make this reputation
your sales asset...for greater
profit and better cus-
tomer satisfaction.
GENERAL REFRIGERATION DIVISION
Yates-American Machine Co.
Dept. AC-1 Beloit, Wisconsin

SQUARE D IN REFRIGERATION
DO IT ALL WITH SQUARE D
SWITCH PROTECT REGULATE
SQUARE D COMPANY
REGULATOR DIVISION • DETROIT

Whether for Freon-12 or
Ammonia Service, Specify
FRICK
Semi-steel Valves
They hold pressures up to 300 lb. gage
—whether handling ammonia, Freon-12,
methyl chloride, CO, or natural gas,
at normal or low temperatures. Only
in Frick valves do you get the
patented high-angle seat, alloy-faced
button, and easy repacking which
have given them the preference for
Full range of sizes, 1/2" to 14". Screwed valves up to 2".
generations. . . . Frick Distributors in principal cities everywhere . . . Ask for
Catalog K . . . Your copy is
waiting. Some good territories
still open for distributors.
FRICK CO. Waynesboro, Pa.

Wartime Problems Of Retailers To Be Forum Subject

(Concluded from Page 1, Column 1)
men, was founded two years ago and
now has 15,000 active members en-
rolled in 200 local chapter cities
coast to coast.

Two hundred delegates will attend
the forthcoming conventions . . . 100
Eastern delegates going to New York
City, and 100 Western delegates to
Chicago. Identical programs are
scheduled. During each convention,
General Electric executives repre-
senting various product lines will
conduct open forum discussion
periods.

The conventions will be unique in
that they will mark the first get-
together of appliance retailers from
all parts of the country to discuss
with a manufacturer the mutual
problems imposed by wartime con-
ditions. The problems involved have
no precedent, since the appliance
business as it is known today did
not exist during the last World War.
General Electric Co. executives
who will participate in the conven-
tions include: J. DeJen, W. I. Wilt,
A. L. Scaife, J. R. Poteat, L. H.
Miller, C. W. Theelen, C. M. Snyder,
A. G. Chaffer, A. A. Brandt, J. C.
Saur, A. L. Atkinson, A. C. Sanger,
B. W. Bullock, R. J. Cochran, W. C.
Noll, and L. G. Hertzler.

Gundell Directs G-E Appliance Adv.; Army Recalls Maj. Bullock

(Concluded from Page 1, Column 2)
Major Bullock was a second
lieutenant in World War I. When
the war ended, he returned to the
University of Illinois, where he was
student colonel of his R.O.T.C.
brigade. Following his graduation
in 1922, he continued his army affilia-
tion as a reserve officer.

Major Bullock's service record of
nearly 20 years with General Electric
Co. started in the publicity depart-
ment at Schenectady, where his first
assignment was market research and
analysis. Then came a three-year
dealer promotional job dealing with
the increasingly serious problem of
distributing catalogs, handbooks,
sales aid, direct mail.

He was then placed in charge of
the company's institutional advertis-
ing program, and in 1930 was ap-
pointed division manager responsible
for advertising products sold to elec-
tric service companies. In 1933 he
was appointed assistant to the man-
ager of the publicity department, and
shortly afterward, assistant manager.
In 1939 he was appointed advertising
manager of the appliance and mer-
chandise department.

Mr. Gundell, assistant advertising
manager, who will be in charge
during Major Bullock's absence, has
been assisting Mr. Bullock in the
administration of the advertising
division for the past several months.

Mr. Gundell had formerly directed
the advertising and sales promotion
activities of the General Electric air
conditioning and commercial refrig-
eration department for five years.

Nelson Explains Plan Of New Government Production Board

(Concluded from Page 1, Column 5)
the other agencies will report directly
to Mr. Nelson, will consist of:

Purchases—Douglas MacKeachie.
Production—W. H. Harrison.
Materials—William L. Batt.
Industry Operations—J. S. Knowl-
son.
Labor—Sidney Hillman.
Civilian Supply—Leon Henderson.

A seventh division, not yet organ-
ized, will work in the field and co-
ordinate the work of the present field
offices of priorities and contract
distribution.

In announcing the appointment of
Ernest C. Kanzler as head of the
Automotive Branch, with full power
to direct the conversion of the auto-
mobile industry to defense work as
quickly as possible, Mr. Nelson
indicated that this was the pattern
which would be followed in bringing

Priorities System Is Still In Full Force

NEW YORK CITY—Abolition
of the OPM has not in any way
affected the priorities system,
which is still in full force, declared
Sydney Hogerton, district man-
ager of the New York Priorities
Field Service, in a statement made
late last week in reply to a flood
of questions from businessmen in
this area.

Some of the questioners appar-
ently felt that the end of the OPM
meant the end of priority orders
and the filing of reports and
extensions of orders, etc.

"We have been advised by
Washington," Mr. Hogerton said,
"that all orders and regulations
of the priorities system remain
in force and must be respected."

other major industries, estimated to
number 50, into the war effort in full
force. All of these industry groups,
he said, would report to Mr. Knowl-
son, as head of the Division of
Industry Operations.

"It may be that we may come to
the day when there will not be
enough materials to enable all of
the industry units in many civilian lines
to keep operating," Mr. Nelson said.
"When that day arrives we will have
to bring out plans for 'pooling' pro-
duction for the industry in one or
two plants. Those which remain and
which cannot be adapted to war
work will have to be closed."

The division of industrial opera-
tions, under Mr. Knowlson, will have
charge of all industry branches, and
will have the responsibility for plant
conversion, for which task it takes
over the engineering staff assembled
by Floyd B. Odum, when he headed
the Division of Contract Distribution
(abolished under the new setup).

Mr. Knowlson's division will also
handle priorities. (Mr. Knowlson was
president and chairman of the board
of Stewart-Warner Corp. before
getting into the War Production or-
ganization at Mr. Nelson's request.)

The operations division will initi-
ate conversion plans for entire indus-
tries, such as in the case of the
washing machine industry, but will
not initiate the changeover of indi-
vidual plans to war work. It will,
however, give advice to individual
producers on conversion problems,
Mr. Nelson declared.

Leon Henderson will operate the
Civilian Supply Division along lines
followed under OPM.

"Will Mr. Henderson continue as
Price Administrator?" Mr. Nelson
was asked.

"He will," answered Mr. Nelson.
"I have the greatest respect for Mr.
Henderson's capacities and I am sure
the two jobs will not be too much
for him."

Industry branches under the pro-
duction division will consult with
labor and management in any indus-
try which is due to suffer through
conversion or severe curtailments in
materials, Mr. Nelson said, and will
work out plans to meet the situation
well in advance.

"We are interested in speed," he
declared, "but I think that a day or
two spent discussing an approaching
problem with those most affected,
sometimes saves weeks through
eliminating confusion."

Directs Field Operations



BEN T. ROE
Manager of distribution for
Crosley Corp.

Stores' Aid Urged To Halt Inflation

(Concluded from Page 1, Column 4)
national purchasing power occupied
much of the attention of the home
furnishings session of the N.R.D.G.A.

No session on appliances was held
at this year's N.R.D.G.A. conference,
but price control and consumer
credit problems arising from in-
creased national purchasing power,
subjects of interest to appliance
dealers, were discussed by speakers
at the home furnishings, credit man-
agement, and merchandising sessions.

"Inflation can and will be pre-
vented through the medium of a
carefully planned and properly ad-
ministered price control program,"
Dr. James F. Bogardus, price execu-
tive of the consumers durable goods
section of OPA, told the home fur-
nishings session.

Defense production in this country
will rise to 50% of the total produc-
tion, he predicted, compared with
last year's 15 to 20%.

Declaring that "forces are already
at work which will lead to a serious
inflation unless speedily checked,"
Dr. Bogardus said:

"Two years after the outbreak of
the present World War, the purchas-
ing power of the wage earners' dol-
lar had declined to 94 cents. Prices
remained relatively stable after the
outbreak of the present war, but in
March, 1941, they started to advance
rapidly.

"Since August, 1939, the cost of
living had risen nearly 12%. During
the same period the wholesale price
level has increased about 25%, and
basic raw materials have risen about
58%. The wholesale prices of house
furnishings have risen nearly 25%,
while the retail prices of the same
items have risen nearly 21%.

Today's forces making for infla-
tion are much more pronounced than
during the first World War, Dr.
Bogardus said, pointing out that
consumer purchasing power has
risen more rapidly and consumers
goods have been curtailed more
sharply.

He suggested three methods of
dealing with the present situation:
1. Let the forces now operating
continue unchecked. This would lead
to serious inflation.

2. Tax away purchasing power to
such an extent that inflation would
be checked. This method is being
and will be used, but not to the
extent of bringing purchasing power
in line with the amount of consumers
goods available.

3. Direct price control, accompanied
by rationing where necessary. Necess-
ity for this type of control, Dr.
Bogardus said, led to the establish-
ment of OPA last year.

He urged retailers to keep inven-
tories at a reasonable level; not to
hoard; to remember that unwar-
ranted price increases bring customer
repercussions in the future.

"You must help to regulate prices
yourselves," he said. "It would take
a staff of 150,000 persons to police
retailers to see that they keep
prices within bounds."

Frank J. Scott, vice president of
the Morris Plan Corp. of America,
told a credit management session
that priorities and rising prices
would have curtailed consumer credit,
without the imposition of Regulation
W. Higher income taxes, increased

social security assessments, and the
probable siphoning of excess earn-
ings by compulsory savings will
build up a backlog of future pur-
chasing power more surely than any
restraint on the normal borrowing
habits of individuals, he declared.

"Let us hope that Regulation W
will not create bootleg loaning
agencies in the consumer credit
field, to the disadvantage of legiti-
mate and supervised loaning agen-
cies," he said.

"Now that automotive production
for consumer use has been ordered
discontinued, new passenger cars will
not be available to finance. Like-
wise, refrigerators and other appli-
ances were freely sold on time,
whereas restrictions in the future
will curtail this production."

"As a result, we must be prepared
to see the finance volume from the
sale of listed articles reduced as a
defense program demands more and
more restrictions of materials into
consumer channels."

It is also to be expected, Mr. Scott
said, that the regulation will expand
its present field, and that new listed
articles will be added.

For 1942—most complete range of styles and
sizes—12 to 71.5 cu. ft.—in the industry.
New modern styling—priced for real value.
Reach-in CABINETS
Milwest
Mfg. Company
GALESBURG, ILLINOIS

VIRGINIA
Dependable Refrigerants
VIRGINIA SMELTING CO.
WEST NORFOLK, VA.

MILLS MIGHTY REFRIGERATION

Mills Condensing Units
By Mills Novelty Company
4100 Fullerton Ave., Chicago, Ill.

CLARAGE FANS—QUIET RUNNING!
Every Clarage Fan Wheel is BOTH stat-
ically and dynamically balanced—
every precaution taken to insure free-
dom from vibration and QUIET operation. That's one BIG rea-
son why so many unit conditioner
manufacturers prefer Clarage Wheels and
Complete Assemblies. And, yes, we build
a complete range of sizes!
May we have your next inquiry?
CLARAGE FAN COMPANY
KALAMAZOO, MICHIGAN
Sales Offices in All Principal Cities

Neoprene Substitute For Door Gaskets Found By Jarrow

CHICAGO—A substitute for neoprene that can be used for refrigerator door gaskets has been developed by Jarrow Products here, reports Harry Jarrow, owner. The new product, known as "Jarene," is claimed to be superior to neoprene in many respects as a gasket material, and does not contain any materials which at present are classed as critical.

Tests have shown that the material is 100% greaseproof, it is claimed, and that it is also unaffected by most acids. Applied to a gasket fabric, it is said to provide a bond that will not permit flaking. The product has a tough, pliable surface, and is claimed to have a high resistance to abrasion.

Future experiments may show that the material can be adapted to other uses, Mr. Jarrow said, but at present it is available only as a door gasket covering.

Fainsod & Auerbach Named Price Chiefs For Durable Goods

WASHINGTON, D. C.—Appointment of new price executives for the consumers durable goods section of the Office of Price Administration has been announced by J. K. Galbraith, assistant administrator.

Merle Fainsod, formerly associate price executive, was named acting price executive, while Alfred Auerbach, until recently the editor of "Retailing," was appointed associate price executive.

The post of price executive of the consumers durable goods section had been held by James Bogardus, who recently was transferred to OPA's New York regional office as regional price executive.

Mr. Fainsod is on leave of absence from Harvard university, where he is assistant professor of government and member of the faculty of the Littauer School of Public Administration.

He was a consultant to the Temporary National Economic Committee in 1940 and in 1936 was on the staff of the President's Committee on Administrative Management.

Utility Commercial Men To Meet March 24-26

CHICAGO—Commercial forces of Edison Electric Institute will meet at the Edgewater Beach hotel here March 24 to 26 for a general power conference. The conference will be preceded by a day of committee meetings March 23.

Tentative plans call for the elimination of sectional conferences. There will be general sessions only, all of which will be open to manufacturers and others interested in electric service supply.

Detroit ASRE Section First Group To Meet In Rackham Memorial

DETROIT—Feb. 2 meeting of the Detroit Section of the American Society of Refrigerating Engineers will be the first meeting of any engineering group to be held in the newly constructed Rackham Engineering Educational Memorial building here.

The building opens officially Feb. 1. Located at the corner of Woodward Ave. and Farnsworth St., the building is said to be the most beautiful and sumptuously furnished structure of its kind in the world. It was built from funds created by the estate of Horace Rackham, one of the original partners in the Ford Motor Car Co.

The meeting will be preceded by a dinner at 6:45 p.m. in the English room of Webster Hall hotel, just a block from the Rackham Foundation. Charge for the dinner will be \$1.50. The meeting in the new building is scheduled to start at 8 p.m.

"Applications of Air Conditioning to Armament Production" will be the subject of the meeting, with the speakers being William Henderson, executive vice president of the Air Conditioning & Refrigerating Machinery Association, and F. O. Jordan, consulting air conditioning engineer.

Shearman Will Address Baltimore Engineers

WASHINGTON, D. C.—"Latest News from the Office of Production Management Pertaining to Refrigeration" will be discussed by C. W. Shearman, chief of the air conditioning and refrigeration section of the OPM equipment and supplies procurement division, before members of the Baltimore-Washington section of American Society of Refrigerating Engineers Jan. 29 in the Continental hotel here.

Dinner will precede the educational meeting, which is scheduled for 8:15 p.m. In addition to Mr. Shearman's report, a talk on "Evaporative Condensers" will be presented by W. R. Heath, assistant chief engineer of Buffalo Forge Co., and Charles J. Allen, manager of the Baltimore-Washington branch of Frigidaire, will lead an open discussion on "The Importance of Proper Installation and Service—Its Effect on Sales and Dealer Profits."

G-E Plans Regional Commercial Cooling Sales Conferences

BLOOMFIELD, N. J.—To discuss prospects for 1942 and methods of adapting sales programs to wartime economy, officials of the General Electric air conditioning and commercial refrigeration department have arranged a series of regional meetings with distributor principals and members of the field organization.

Meetings opened in Boston on Jan. 26. The schedule of the remaining meetings is as follows: Philadelphia, Jan. 28; Atlanta, Feb. 2; Cleveland, Feb. 4; Chicago, Feb. 5; and San Francisco, Feb. 9. All meetings will be one-day sessions, with round table discussions and individual conferences.

The group conducting the meetings will be headed by J. P. Rainbault, manager of the department. With him will be J. E. Kusik, in charge of financial division; L. H. Hobson, manager automatic heating sales; C. M. Rowland, manager packaged cooling equipment sales; S. Martin, Jr., manager industrial and contractor sales; E. Macaulay, manager advertising and sales promotion; and D. F. Hines, acting assistant sales manager.

Distributor Supplies Showroom For Dealers

ROCHESTER, N. Y.—In a move to assist dealers who may be forced by curtailment of new merchandise to give up their own display facilities, Erskine-Healy, Inc., Norge distributor, has completely remodeled its appliance showrooms and made them available to its retailers for use in attracting and demonstrating to prospects. Shop facilities of the company also have been enlarged considerably.

"We've got to play ball with dealers during this uncertain period," said Ray Healy, vice president of the company. "That means giving them demonstration facilities they may not be able to keep up themselves."

Methyl Alcohol Use As Anti-Freeze Cut

WASHINGTON, D. C.—Manufacturers accustomed to making anti-freeze compounds containing methyl alcohol (wood alcohol), will be forced to seek substitutes by the terms of Amendment No. 2 to General Preference Order M-31, recently announced by the Priorities Division.

The order, now in effect, forbids the use of methyl alcohol for manufacture into, or packaging as, an anti-freeze agent. The prohibition applies to all stocks on hand as of Jan. 1.

Persons having supplies of methyl alcohol originally intended for anti-freeze uses, are required to report all details to the chemicals branch of the OPM, and in the meantime must hold such stocks for disposition as ordered by the Director of Priorities. Exempted from the prohibition are orders placed by the armed services of the United States, and governments of lend-lease countries.

Another provision of the amendment assigns a preference rating of B-8 to deliveries of methyl alcohol, under certain specified conditions, to persons who require it for general denaturant and solvent uses.

Range Shipments Totaled 38,350 In November

NEW YORK CITY—Shipments of electric ranges to distributors and dealers in the United States totaled 38,350 units during November, an increase of about 52% over the 25,248 units reported for the same month of 1940, according to reports of 20 manufacturers to National Electrical Manufacturers Association.

For the first 11 months of the year, range shipments totaled 635,154 units, a gain of 67% over the 379,613 reported for the same period of 1940, Nema figures reveal.

Plastic Tray Has 'Convenient-To-Use' Features



Individual ice cube "cups" in the new Sani-Tray household refrigerator ice cube tray introduced by Swift Mfg. Co., are made out of plastic. Individual cups can be removed from the tray without removing the whole tray, and cubes are said to be easily flexed out of the holders.

Plastic In New Ice Hardware Men Protest Tray Said To Pass All Tests of Usage

(Concluded from Page 1, Column 2) angle. At present the cups are drawn from clear Ethocel sheeting, a Dow Chemical Co. product, which tests have proved to be odorless, tasteless, and unusually durable. Having a fairly high rate of heat transfer, the plastic tray is said to have the fast-freezing qualities desirable in ice cube trays.

Ethocel is an ethylcellulose plastic, the toughest cellulose material commercially available, according to Dow engineers. It can withstand severe handling at temperatures as low as 50° below zero, and can be put in boiling water without harmful effect.

A production advantage is that the material can be drawn, crimped, or worked into shape by other means at normal temperatures. Dow claims that the material is workable even at sub-zero temperatures.

MINNEAPOLIS—Protest of any discrimination against retail hardware dealers, as compared with REA selling agencies, in the terms which the hardware trade is allowed to make in the selling of electrical appliances was voiced by the Minnesota Retail Hardware Association at its convention here Jan. 13-16.

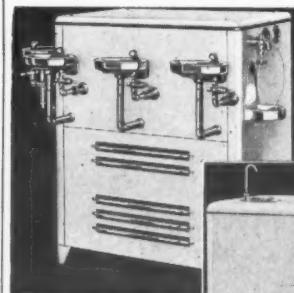
Calling attention, in a resolution, to its appreciation of "the importance of placing instalment selling on a sounder, less inflationary basis through shortening of instalment terms and increasing down payments required," the association pledged itself to exert leadership along such lines "provided its membership is not requested to sell electrical appliances on terms less favorable than those made available by cooperative agencies fostered by the REA."

Memphis Dealer Moves

MEMPHIS, Tenn. — Appliance Sales Co., formerly at 201 Monroe Ave. here, has moved to 28 S. 3rd St.

FOR ANOTHER YEAR of PROGRESS

"DAY & NIGHT" pledges its full cooperation in the task that lies ahead for the Refrigeration Industry as it continues to play an important part in helping to win the war. To that end, every possible effort will be made to fill our customers' needs as rapidly as conditions permit. Let's all pull together for a quick and lasting victory!



Above: U. S. Navy Cooler. Meets Navy Specifications. Other models made to Army specifications. Right: Water coolers for self-contained installation.

For over a decade "Day & Night" Storage Type Water and Beverage Coolers have played an important part in the development of modern Refrigeration and Air Conditioning. They are known and used from coast to coast.

Left: Normal Suction Pressure Storage Tank Coolers in all sizes. Capacities from 2 to 105 gallons. Below: High Suction Pressure Storage Tank Coolers in capacities from 25 to 150 gallons.

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—Bottling Industry—For drinking water—jacket water—processing water—air conditioning—temperature control.

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F. M. COCKRELL, Founder

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Refrigeration Will Help Win the War

Long Warranty Periods Under Scrutiny

PRODUCT of the days of intense sales rivalry, rooted in the oldtime struggle between sealed and open-type systems, relic of the days of plenty, the long guarantee is still in force as an instrument of sales policy in the household electric refrigerator business.

Why?

A good many thoughtful people in the industry are frank to say that under today's drastically changed conditions the long guarantee is not only economically unsound, but that eventually it may provide the industry with obligations it will be unable to fill!

It assumes that there will be a plentiful supply of repair parts and replacement units during the next three years. It also assumes that there will be a supply of trained mechanics and service men available to the industry.

NO FACTS YET TO BACK UP EITHER ASSUMPTION

Neither assumption has any facts to support it. There are hopes in support of the proposition—reasonable hopes, too, but no facts.

As yet no program to provide repair parts for household refrigerators has been approved. One is "in the works," but has been held up by Donald Nelson's dissolution of the OPM and his subsequent drastic reorganization of priorities personnel and procedure. What will come out at the end of the hopper is now uncertain.

Trained mechanics and service men present another problem. The shortage is now apparent. It will undoubtedly get worse, possibly much worse.

Service calls will have to be held to a minimum, in order that service man-hours may be most usefully distributed.

Service people tell us that the majority of service calls answered during the guarantee period could be eliminated, and that if the customers had to pay for each call, undoubtedly fewer would be made. Should manufacturers and distributors saddle themselves with such obligations when they are bound to become more expensive and difficult to maintain?

This is a question that requires immediate attention.

Furniture Isn't the Answer

THE NEWS has promised to help dealers prepare for the changed conditions which are ahead. Part of this obligation can be fulfilled by pointing out new lines of endeavor; equally important is the presentation of negatives on new occupations which others may suggest.

On the positive side, we have pointed out the advisability of stocking up on all the refrigerators which you can obtain. Next, we have advised the training of additional service personnel, of building up this department to meet the profitable demands which will increasingly be made upon it.

In service, we believe, lies the salvation of many distributors and dealers.

As for additional lines, one seems to be popular right now. It's furniture. Reasoning that there's plenty of wood and fabric, a number of dealers have taken on the merchandising of bedroom and living room suites, carpeting, lamps, and suchlike.

TRANSPORTATION PROBLEM TO AFFECT FURNITURE INDUSTRY

There is a danger in this move, however, that should be pointed out. Be not deceived by apparent lack of supply difficulties in this field. Carpeting, of course, will soon become very short indeed. Wood may be plentiful, but lacquers and metal parts are getting scarcer.

Biggest difficulty facing the furniture retailers, however, is the coming shortage of transportation. While tires wear smooth, coastal shipping becomes non-existent, and military traffic increases, the strain on the railroads is becoming unprecedented.

Rationing of passenger travel will probably begin next summer, and after that, freight rationing.

Furniture is bulky. It is decidedly less essential than military supplies and foodstuffs. Hence it stands in a vulnerable position with regard to its chances to get freight space when freight rationing comes.

In other words, the future for the furniture retailer *per se* appears none too bright at the present writing. We strongly recommend that appliance dealers fill up available floor space with appliances, rather than with bedroom suites.

Going into the furniture business now is jumping from the frying pan into the fire.

Build up your service department instead.

They'll Do It Every Time . . . By Jimmy Hatlo



QUOTED

THE REMARKABLE PERFORMANCE OF THE ELECTRICAL INDUSTRY

FEW industries are more extensively involved with nearly all phases of the production of war equipment than the electrical industry. When the defense program was started in early 1940 the manufacturers of electrical goods were quickly called upon to build more generators, to supply power for the planned factory expansions. Most everyone is aware of the fact that the huge increase in aluminum production which may reach 800,000 tons per year by 1944 will require a tremendous quantity of electric power.

The steel industry and almost all the metal fabricating plants are installing more motor equipment, control apparatus, and electronic tube devices. The needs for electric welding and heating equipment are increasing steadily. No small tonnage of copper cable is being consumed by the enlargement of our power distribution systems throughout the nation.

The research, engineering, and manufacturing facilities of the electrical industry have been more readily converted over to a war basis than in most other industries. The makers of electrical equipment seem to have some peculiar pioneering characteristic in adapting their resources to new channels probably because they have always seriously stressed the importance of planning ahead, coupled with flexible provisions for the introduction of any random uncertainties. Plans to curtail the production of semi-luxury electrical appliances were adopted early. Western Electric, General Electric, Westinghouse, R.C.A., Allis-Chalmers, and hundreds of smaller producers speedily prepared for the manufacture of thousands of various precision items directly required by the army, navy, and air force. The industry is not only manufacturing electrical devices but also guns and other direct combat items. "Before the end of the year, General Electric was devoting about two thirds of its production facilities to war times, with some of its plants engaged almost entirely in such production," writes Guy Bartlett, public relations expert for the General Electric Co.

Electrical equipment is definitely going to play a much more important part in this war than in World War I. Early in the war British engineers quickly solved the problem of the magnetic mines which the Nazis practically described as a new revolutionary weapon that would have Britain on her knees in a few months. The destructive part of this new weapon was eliminated by constructing heavy copper cables, carrying a de-gaussing current around the hulls of ships. All modern aircraft and mechanized tactical units are equipped with extremely elaborate electrical devices and instruments, particularly radio equipment. The war has also provided a new stimulus for the manufacture of mining, railway, and marine electrical apparatus. The broader application of Diesel-electric propulsion has been conspicuous. Numerous outstanding developments have been made in connection with aviation, such as turbo-superchargers and electrically heated suits which permit planes to be flown more effectively in the stratosphere.

Even when the industry was rapidly swinging over to a wartime footing the production of electric refrigerators, washing machines, stoves, irons, air conditioning equipment, industrial x-ray units, electric-arc furnaces for making steel, and conveyor systems probably reached new peaks in 1941.

The Bell System installed more telephones last year than in any year on record. More than 1,360,000 telephones were added bringing a total number of telephones in operation at the end of the year to 18,840,000. The industry has also been busily engaged in filling export orders. Wide spread conservation of metals will mean severe curtailment in the 1942 output of non-essential appliances.

A new record was established last year for the manufacture of lamps with sales estimated at around 720,000,000 units of the tungsten filament type, exclusive of the miniature lamps. There was a notable rise in the demand for big wattage lamps. The production of mercury fluorescent tubes was just about nil in 1938 but sales rose to about 22,000,000 lamps in 1941.

Bookings of electrical goods were at a new peak in 1941 and may be estimated at more than \$2,500,000,000, based on data compiled by the Department of Commerce.

The following table shows the trend of electrical goods orders for the past 16 years. The figures are based on reports from 78 manufacturers to the Department of Commerce, and are considerably under the estimates of the National Electrical Manufacturers Association, since the latter cover a larger number of classifications of products:

Year	Value	Year	Value
1941	\$2,500,000,000	1933	\$325,000,000
1940	1,433,000,000	1932	283,000,000
1939	870,000,000	1931	579,000,000
1938	631,000,000	1930	814,000,000
1937	930,000,000	1929	1,066,000,000
1936	763,000,000	1928	826,000,000
1935	539,000,000	1927	762,000,000
1934	439,000,000	1926	818,000,000

*Estimated—Value in Jan.-Sept. period was \$1,765,000,000.

Bookings in 1941 were roughly three times as large as the orders taken in 1939. Using this ratio we may theoretically estimate quantities of metals required in 1941. Such correlation as this, while based on hypothesis need not be designated as insignificant even when realizing that there have been conservation measures, a certain amount of transition in the type of products made and the fact that actual consumption lags behind orders booked. The major portion of non-ferrous metals consumed by the industry would be as follows—(1939 figures from A.B.M.S.).

	Interpolated	
	1939 Tons	1941 Use Tons
Copper (electrical equipment, power lines, telephones, air conditioning, refrigerators, radio)	334,000	1,002,000
Lead (storage batteries, cable)	272,400	817,200
Zinc (battery cans)	21,670	65,010

It should also be cited that the electrical industry has been consuming important quantities of tungsten, quicksilver, platinum metals, tin, and steel.

It is expected that a new expanded war program will be planned by the OPM and representatives of the electrical industry similar to the one for the automobile industry which was outlined in Washington on Monday. Before the U. S. was attacked, the latter industry was scheduled to produce about \$2,500,000,000 worth of war equipment but that figure will now be more than doubled. It is of interest to note that the 37 OPM industry advisory committees function under the directorship of one of our prominent electrical industry executives, Philip D. Reed, on leave, as Chairman of General Electric.

The nation's electrical research laboratories are concentrating their integrated efforts almost entirely on problems intimately related to the war. The quiet, painstaking scientists who zealously toil long hours, forgetting all about "overtime" clocks, may be far from the publicized fighting fronts but they are making most vital contributions to winning the final victory.—"American Metal Market," Jan. 8, 1942.

Rebuilding Operations

Overhaul of Open-Type Household Unit Is Fairly Simple If Each Part Is Checked

Step-by-Step Procedure For the Service Shop

By R. L. Walsh, Westchester Dealers Refrigerator Rebuilding Service, New Rochelle, N. Y.

Editor's Note: The following is Part 1 of a two-part article on the fundamental procedure in overhauling and rebuilding an open-type household electric refrigerator unit. This is another in AIR CONDITIONING & REFRIGERATION NEWS project of presenting special service information as the occasion arises.

The information was prepared by Roland L. Walsh, who owns and operates the Super Refrigeration Sales & Service in New Rochelle, N. Y., and also acts as the exclusive rebuilder of electric refrigerators in Westchester county. Mr. Walsh will probably prepare further information on rebuilding operations on other types of units, in the future.

There are no short cuts in tearing down and rebuilding electric refrigerator units. Don't fail to add the little extra effort or the new part that may cost only a few cents to make a job right, because if you don't do these things you will have to make service calls later that will cost much more than you ever might have saved by cutting corners.

This is a step-by-step description of the tearing down and rebuilding of an open-type household electric refrigerator unit.

First step upon getting the unit into the shop is to remove the refrigerator from the system. For this purpose it is best to have a large empty cylinder with a master strainer fitted into the line, to assure the removal of all foreign matter from the gas.

After making sure that all of the valves are back seated, connect a line to the head valve and when this has been done front seat the head valve all the way. Then put the unit into operation and discharge all the gas into the large cylinder.

Apply heat to the receiver, condenser, evaporator, and compressor body to drive all of the refrigerant into the empty cylinder. When you are sure that all the gas is out of the system stop the machine and back seat the head valve all the way back, and set the plug back tightly.

Next step is to remove the motor from the base. Then take the pulley and fan off of the motor shaft and check to see if the fan is loose from the pulley, tightening it if it is.

Take a set of test leads with two spring clips on the end and test the motor for noise and rattles and speed.

Start to take the motor down by removing the end bells and then taking the oil wicks and soaking them in gasoline to soften them. The wicks should then be dried and placed back in the end bells. All parts of the motor should be cleaned and care taken to see that grease and foreign matter are removed.

Use emery to give the push rods a smooth finish, put in a new neck-lace and brushes, and then re-assemble the motor and check by means of your hand for end play. If the end play is more than $\frac{1}{8}$ of an inch, add shims equally on both ends to take up the end play, never adding more on the front end than on the back end.

The motor should then be tested for speed, and while it is idling the commutator can be sanded down. Then adjust the brush ring assembly so the best kicking off of the brushes is attained. Next mount the pulley and fan.

Disassembly of the compressor is the next step. It will first be

necessary to disconnect the suction and discharge valve from the compressor and then remove the compressor bolts so that it can be separated from the base. When the compressor is out of the cabinet remove the oil plug, emptying all the old oil into a can.

In taking the compressor down, the first move is to take off the cylinder head and then remove the seal assembly. Gaskets should be checked and cleaned if still usable, or replaced if not.

The connecting rod bearing should be taken off, permitting the removal of the shaft, connecting rod, and piston. It is a good idea to have a tray handy in which to keep these parts. Wash all the parts in carbon tetrachloride, or some similar cleaning agent.

Check the wrist pin, making certain that there is no play in it by moving the connecting rod sideways. If there is any play in it, renew the wrist pin, and thus eliminate compressor noise.

Replace the suction and discharge valves, and then make certain that the discharge valve is clear and moves up and down freely.

When reassembling the compressor be sure that the markings for the connecting rod bearing match up with the way it was taken off, and then be sure to tighten it so that there will be no "knocking" in the compressor.

It is almost always best to install a new seal, measuring the distance between the shaft and the seal face according to the directions for the new seal that is to be installed.

Put compressor base back in place, using a new gasket and then re-assemble the valve plate assembly and compressor head, again using new gaskets. Never use anything but oil on the new gaskets. Fill the compressor to the proper level with fresh oil. Make sure all bolts are tight, but don't force them so that they will strip.

(This article to be concluded next week)

Fluorescent Lighting Facts Provided In Booklet

BLOOMFIELD, N. J.—A new 35-page booklet, "Facts, Questions, Answers on Fluorescent Lighting in Industry" has been announced by the Westinghouse Lamp Division.

Prepared for non-technical readers, this booklet answers questions in regard to cost, efficiency, advantages, and maintenance of fluorescent lighting in industrial plants. Subjects covered include fluorescent lamps and accessories, fluorescent lamp equipment, design of fluorescent lighting installations, cost of fluorescent lighting installations, and questions and answers on lamps and accessories.

New Motors Data Is Offered By Wagner

ST. LOUIS—Detailed descriptions of single phase, direct current, and small polyphase motors are contained in a new 34-page bulletin published by the Wagner Electric Corp. here.

"Bulletin MU-183" discusses repulsion start-induction, repulsion-induction, capacitor-start, split phase, direct current, fan, and explosion-proof motors.

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Purchasing Agents Display Coolness To Production Requirements Plan

NEW YORK CITY—The Production Requirements Plan, which is expected eventually to be the basis on which all vital materials are allocated by the government, has not found many adherents among purchasing agents, according to reports at a forum of the Purchasing Agents Association of New York.

Industrial buyers, it was said, hesitate to give up the priority system, to which they have become accustomed, for something that may work out better, but which at the present time requires a detailed mass of information and has many "bugs" in it.

Much misinformation and lack of knowledge concerning the PRP plan prevails, purchasing agents said, and those who have studied it for adaptation to their own use hesitate to

go into it. Use of PD forms on ordinary materials and the P-100 forms on repairs and maintenance and operating supplies seem to be working out fairly well in most cases, and agents are reluctant to abandon them.

One of the difficulties of the PRP plan is that it presupposes that the manufacturer of a material is acquainted with the final form in which it will emerge as a product. The purchasing agent for a plastics company reported that in many cases he had found it impossible to discover the final use of his product, because fabricators refused to tell him.

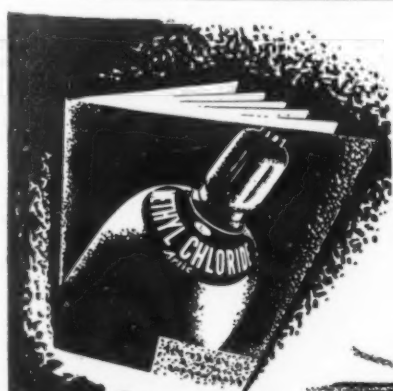
It was asserted that manufacturers did not always know where such an obvious product as an incandescent lamp would wind up.

Carnegie Institute To Streamline Course On Refrigeration

PITTSBURGH—Beginning in June, daytime courses in air conditioning and refrigeration at Carnegie Institute of Technology here will be streamlined into a continuous four-years' course to be completed in 36 months, reports Prof. W. Trinks, head of the department of mechanical engineering.

Students will commence in June instead of in September and will continue for nine months, covering one complete year of work, Prof. Trinks explains. Immediately upon completion of the nine-months' course (one year's work) the second year's work will commence.

Full four-year course will be completed in 36 months, with no time out for vacations, according to the plan outlined.



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An Open Letter to Dealers and Servicemen

Gentlemen:

You men engaged in refrigeration servicing are rendering a much-needed service to your community and to your country. The "powers that be" in government circles intend to see that you are allowed to continue this service.

A shortage of service men, caused by high wages in armament industries, plus the draft, is now appearing. If it grows alarming, you are likely to have more work than you can take care of before many months have passed.

The relative scarcity of new equipment will throw the biggest burden of all time on refrigeration service men. When worn and faulty installations no longer can be replaced, they must be repaired -- and often without the proper equipment or supplies.

In short, the nation's refrigeration service organizations will, in 1942 and henceforth: (1) be fewer in numbers; (2) have more work to do than ever before; (3) have less equipment to work with; (4) be forced to train new men; (5) be forced to rely more than ever before on knowledge and ingenuity.

To the refrigerator dealer, then, we say: "See to it right now that your service department is adequately staffed and thoroughly trained. Better learn something about service yourself, because you may need that knowledge in an emergency. From midsummer on, service is going to be your bread-and-butter."

To independent service organizations we say: "Don't get discouraged. Try to keep your good men. Train replacements for those you have lost. Brush up on your knowledge, because the use of more 'know-how' will be your only salvation in the face of materials and supplies shortages."

George F. Taubeneck
George F. Taubeneck
Publisher

A 5-Point Program of Action (1) Make your service organization as efficient and effective as possible -- your services will be needed by America now as never before. (2) Obtain and maintain an adequate and competent service staff. (3) Thoroughly train replacements for the men you have lost; jump the gun by breaking in apprentices for the men you may yet lose. (4) Learn how you can conserve vital materials, or substitute less vital ones in making repairs. (5) Brush up on your own knowledge of service problems so you can go to bat yourself in any emergency that may arise. **Begin Now!**

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MASTER SERVICE MANUALS on COMMERCIAL REFRIGERATION—Fundamentals of installing and servicing commercial systems set forth in three clearly written, well illustrated books. Tables on properties of refrigerants, complete data on valves of all types, dehydrators, condensing units, evaporators, controls, and motors. Designed for the practicing service engineer who needs dependable reference information. Each book \$1.00. Complete set \$3.00.

SPECIFICATIONS MANUAL—Key specifications of all household refrigerators, commercial condensing units, and air conditioning equipment built through 1936. Gives belt sizes, refrigerant and oil charges, etc. Especially useful for identifying parts of and making replacements on this old equipment. 512 pages. Price \$1.00.

1942 REFRIGERATION AND AIR CONDITIONING DIRECTORY—Lists all manufacturers of household and commercial refrigeration and air conditioning systems, parts, materials, and accessories by company name and by product. The industry's complete, accurate source-of-supply reference. Price \$1.00.

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City State

RY On the Job

Pictures From Norge Distributors' Convention Reveal the Courage and Confidence of Field and Factory Men



The degree of "Doctor of Merchandising" was conferred on Norge distributors during their recent visit to Detroit to view the 1942 lines. Here M. G. O'Harra (left) and R. W. Gifford (right) present a diploma awarding the degree to E. L. Davis of Reinhard Bros. Co., Minneapolis.



Time off from business was taken by this group seen inspecting a new automatic shotgun given Vice President Glenn O'Harra by fellow workers. Left to right: George Fullenwider and J. H. Northey, both of Southern Bearings & Parts Co., Charlotte, N. C.; O'Harra; C. E. Beeson of Southern Bearings.



Charles E. Bolton and E. M. Gass, both of the Gibson Co., Indianapolis Norge distributor, give close inspection to a new part in one of the Norge washer models as it is demonstrated by E. R. Bridge (right), sales manager for washers.



J. F. Mehr of Roth Appliance Distributors, Milwaukee, after he had viewed the new Norge lines for 1942.

There are two principal reasons why the editors of AIR CONDITIONING & REFRIGERATION NEWS have devoted a full page of pictures in this issue to the recent convention of Norge distributors and distributor executives.

In the first place the photographs reveal a group of men in this industry who are facing trying, uncertain times with enthusiasm and a willingness to do their job as long as there is any possible way of doing it.

Norge and its parent company, Borg-Warner Corp., are engaged in a large program of wartime production, but as was revealed at the convention, the company—like others in the industry—has not forgotten its field distributing organization and is doing everything possible to help its distributors and dealers keep operating.

Second reason for this page of pictures is simply that they are such swell pictures.

There isn't a stiff pose in the lot of them. They are first-rate candid portraits of refrigerator men at work and at play at a convention—instead of the "dead pan" groups hurriedly rounded up for the usual convention shots.

We hope these pictures will serve as a model to publicity men and others who may have occasion to take similar group pictures.

Credit is due Jim McCandless of Ralph Wolfe & Associates, Norge advertising agency, for his direction of this photography.



Among distinguished after dinner speakers was Ludwig Hommel of Ludwig Hommel & Co., Pittsburgh, Pa.



Man who sells 'em meets man who designs 'em. F. L. Wallace (left) of Summers Hardware & Supply Co., Johnson City, Tenn., and H. H. Whittingham, chief engineer of Norge division of Borg-Warner Corp.



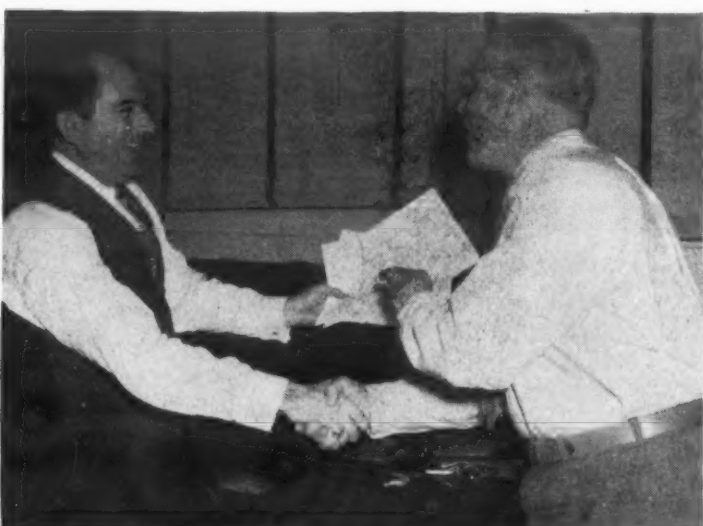
A group discussion between (left to right) E. D. Henley of Birmingham (Ala.) Electric Battery Co., Norge Chief Engineer Whittingham, W. D. V. Hopkins of Hopkins Equipment Co., Atlanta, and Norge Executive Vice President Gifford.



Deep in discussion were J. T. Morgan, Charleston Electrical Supply Co., Charleston, W. Va., and Paul Puffer, Norge general sales manager, at the recent Norge distributor meetings held at Detroit.



Going over the details of the new Norge service plan which will take a leading place in 1942 activities are W. M. Wood (left) of Automatic Sales Corp., Houston, Tex., and Service Manager Jack Cameron.



Refrigeration Sales Manager Jack Tenney (left) and B. H. Spinney of B. H. Spinney Co., Springfield, Mass., shake hands after completing order blanks for the refrigerator lines following the meeting in Detroit.



A birthday dinner with cake 'n' everything was tendered J. F. Mehr of Roth Appliance Distributors, Milwaukee. Here E. R. Bridge, Norge sales manager for washers, holds the cake while Jack fulfills the traditional ceremonies.

Banana Ripening In Iowa — With Refrigeration's Help

Elements In the Banana Storage Installation

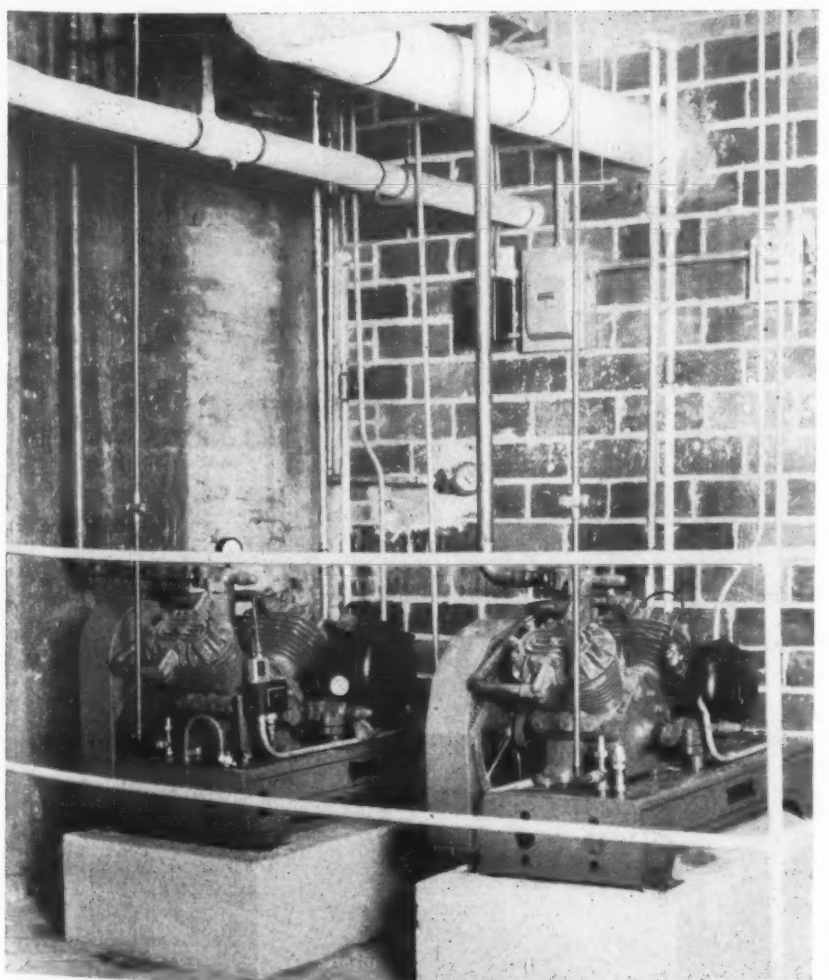
Temperature Conditions Vary In Stages of Ripening Process



Banana storage rooms often require both cooling and heating, the heating being required in cases where the bananas are brought in green and heat is required to accelerate ripening. In each of the carload banana storage rooms (as shown above) in the Gamble Robinson branch storage house at Estherville, Iowa, a unit cooler and a unit heater (on the floor) furnish these requirements in the most modern way.



The elaborate control equipment mounted outside of each room is necessary to provide close control of the varying temperatures and humidities necessary for the correct ripening and storage of bananas.



The neatly mounted Brunner condensing units provide cooling for two large fruit storage rooms (done by the Model W-500 unit) and the four banana ripening rooms (the W-300 unit).

ESTHERVILLE, Iowa—Elaborate control equipment was found necessary for the refrigeration installation in Gamble Robinson Co.'s branch warehouse here, used chiefly for the ripening and storage of bananas.

The branch includes two large fruit storage rooms and four banana ripening rooms, with refrigeration being supplied by two Brunner condensing units. A Brunner W-500 unit refrigerates the general storage rooms, each of which measures 20 x 37 x 10 feet in size. The four banana ripening rooms, 12 x 24 x 9 feet in size, are refrigerated by a W-300 unit.

UNIT HEATER, COOLER

The banana rooms, which are capable of holding a carload of bananas apiece, are also equipped with a blower coil and electrical heating equipment for use when the bananas are brought in green and heat is needed to accelerate the ripening process.

Bananas which are placed in these ripening rooms when green are raised in temperature to about 70° F. by the electric heating unit. After the first 24 hours, this temperature is reduced to about 68° F. until the bananas turn yellow.

At this point the temperature is further reduced to 65° F., and for holding of the ripe fruit temperature is maintained between 56° and 60° F. During the ripening period the relative humidity is maintained at 90 to 95%, but when the fruit has reached the proper degree of ripeness the humidity is dropped to about 80%.

CONTROLLED SEPARATELY

Although only one condensing unit is employed to cool the four ripening rooms, the control system for each room is independent. The load on the unit is not heavy, except at that stage of the ripening process when the temperature builds up to 70° and must be rapidly reduced to prevent over-ripening.

Another way in which the refrigeration load is kept at a minimum is by rotating the loading of the four storage rooms. Thus temperature of the rooms is lowered one room at a time.

The two large storage rooms, which handle vegetables and fruits, are maintained at temperatures around 32° to 34° F. Planning and installation of the cooling equipment was carried out by Robert Hale of the Fruit Dispatch Co. and Herman Victor of Gamble Robinson Co.

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Defense Savings Pay-Roll Allotment Plan

Now company heads can
help their country, their
employees, and themselves

voluntary
pay-roll
allotment
plan

helps workers provide for the future
helps build future buying power
helps defend America today

This is no charity plea. It is a sound business proposition that vitally concerns the present and future welfare of your company, your employees, and yourself.

During the post-war period of readjustment, you may be faced with the unpleasant necessity of turning employees out into a confused and cheerless world. But you, as an employer, can do something now to help shape the destinies of your people. Scores of business heads have adopted the Voluntary Pay-roll Allotment Plan as a simple and easy way for every worker in the land to start a systematic and continuous Defense Bond savings program.

Many benefits . . . present and future. It is more than a sensible step toward reducing the ranks of the post-war needy. It will help spread financial participation in National Defense among all of America's wage earners.

The widespread use of this plan will materially retard inflation. It will "store" part of our pyramiding national income that would otherwise be spent as fast as it's earned, increasing the demand for our diminishing supply of consumer goods.

And don't overlook the immediate benefit . . . money for defense materials, quickly, continuously, willingly.

Let's do it the American way! America's talent for working out emergency problems, democratically, is being tested today. As always, we will work it out, without pressure or coercion . . . in that old American way; each businessman strengthening his own house; not waiting for his neighbor to do it. That custom has, throughout history, enabled America to get things done of its own free will.

In emergencies, America doesn't do things "hit-or-miss." We would get there eventually if we just left it to everybody's whim to buy Defense Bonds when they thought of it. But we're a nation of businessmen who understand that the way to get a thing done is to systematize the operation. That is why so many employers are getting back of this Voluntary Savings Plan.

Like most efficient systems, it is amazingly simple. All you have to do is offer your employees the convenience of having a fixed sum allotted, from each pay envelope, to the purchase of Defense Bonds. The employer holds these funds in a separate bank account, and delivers a Bond to the employee each time his allotments accumulate to a sufficient amount.

Each employee who chooses to start this savings plan decides for himself the denomination of the Bonds to be purchased and the amount to be allotted from his wages each pay day.

How big does a company have to be? From three employees on up. Size has nothing to do with it. It works equally well in stores, schools, publishing houses, factories, or banks. This whole idea of pay-roll allotment has been evolved by businessmen in cooperation with the Treasury Department. Each organization adopts its own simple, efficient application of the idea in accordance with the needs of its own set-up.

No chore at all. The system is so simple that A. T. & T. uses exactly the same easy card system that is being used by hundreds of companies having fewer than 25 employees! It is simple enough to be handled by a check-mark on a card each pay day.

Plenty of help available. Although this is your plan when you put it into effect, the Treasury Department is ready and willing to give you all kinds of help. Local civilian committees in 48 States are set up to have experienced men work with you just as much as you want them to, and no more.

Truly, about all you have to do is to indicate your willingness to get your organization started. We will supply most of the necessary material, and no end of help.

The first step is to take a closer look. Sending in the coupon in no way obligates you to install the Plan. It will simply give you a chance to scrutinize the available material and see what other companies are already doing. It will bring you samples of literature explaining the benefits to employees and describing the various denominations of Defense Savings Bonds that can be purchased through the Plan.

Sending the coupon does nothing more than signify that you are anxious to do something to help keep your people off relief when defense production sloughs off; something to enable all wage earners to participate in financing Defense; something to provide tomorrow's buying power for your products; something to get money right now for guns and tanks and planes and ships.

France left it to "hit-or-miss" . . . and missed. Now is the time for you to act! Mail the coupon or write Treasury Department, Section A, 709 Twelfth St. NW., Washington, D. C.



FREE - NO OBLIGATION

Treasury Department, Section A,
709 Twelfth St. NW., Washington, D. C.

Please send me the free kit of material being used by companies that have installed the Voluntary Defense Savings Pay-Roll Allotment Plan.

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ASK YOUR JOBBER FOR IT

An inexpensive strainer with relatively large screen and sack area. Felt sack is supported inside screen for fine degree of filtering. Gasketed joint at inlet end permits easy removal of screen and sack for cleaning or replacement.

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You can SPEED UP your flaring!



The new Imperial Flaring Tool with slip-on yoke, provides ease and speed of operation never before attained in a flaring tool. The yoke is made so that it can be slipped on over the bar without twisting or turning. The inside edges of the yoke are slotted so that once in position a slight turn holds it in place on the bar. Yokes are made of forged steel. An additional advantage of this tool is the construction of the bottom of the yoke, which permits flares to be made where there is little space between nut and the end of tubing. Flare tubing sometimes offers this problem. Flares soft copper, brass or aluminum tubing. No. 195-F Imperial Flaring Tool, flares 1/4", 3/8", 1/2" and 3/4" O. D. tubing. Price each \$4.25. Also available for all other sizes of tubing.

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STARTS A COLD COMPRESSOR!



Yes! Ranco 91G2 control will start a cold compressor—because 91G2 is a Temperature Control and its operation is affected only by fixture air temperature and coil temperature, and not by gas pressure in the system.

This most modern of all controls for Walk-in Coolers, Refrigerator Display Cases and similar applications, maintains proper fixture air temperature—and assures defrosting of the coil under all load and weather conditions, without adjustment.

See your Ranco Jobber

RANCO, Inc. Columbus, Ohio, U.S.A.

RANCO Type 91G2—The World's Outstanding Commercial Control!

Analyzing Service Complaints on Overloaded or Overheated Motor

Motor Troubles & Their Correction

Editor's Note: Starting with the last issue of AIR CONDITIONING & REFRIGERATION NEWS was a new section in the series of articles on motors written by R. A. Fuller of General Electric Co.'s industrial engineering department—a section that is of prime interest and importance to service engineers now, because it deals with the servicing of electric motors. Previous articles have discussed fundamentals of motor construction, and proper installation and maintenance procedure.

By R. A. Fuller,
Industrial Engineering Dept.,
General Electric Co.

Complaint - -

A. Overload Device Trips Out or Motor Overheats (Cont.)

3. Excessive Load

"Excessive load" may be caused by a number of things and may be evidenced by the overload tripping out, overheating of the motor, or by failure of the motor to start. The reader should refer to most of the causes in Section A and many of those in Section B, "Motor Does Not Start."

One particular cause of excessive load, not covered elsewhere, is the application of the equipment in more severe service than is recommended by the manufacturer. A change to equipment recommended by the manufacturer is desirable, but is often out of the question except as a last resort. The comments given in other parts of Section A, and in Section B, will be helpful.

4. Dirty Condenser

"A dirty condenser," in an air cooled refrigeration condensing unit, causes increased load on the motor by increasing the head pressure at which the unit operates. The condenser can be readily cleaned with a brush or with the attachments of a vacuum cleaner. A clean condenser is more efficient in transmitting heat thus reducing running time, head pressure, and operating cost.

Water cooled condensers develop a coating on the heat transfer surfaces when used with hard or dirty water. With the lowered rate of heat transfer the water regulating valve increases the flow of water in its endeavor to hold a constant head pressure. Thus at first, a dirty water cooled condenser causes an increase in the amount of cooling water used without great increase in the head pressure. As the condenser gets dirtier the water regulating valve is unable to supply sufficient cooling water and the head pressure increases noticeably.

Obviously, under such conditions, the condenser should be cleaned periodically. With this in mind it is advisable to use cleanable condensers, or air cooled condensers, in such installations.

Dirt in the cooling water can be eliminated by installing a strainer in the water line before it reaches the condenser. Some water regulating valves have such a built-in strainer which, to be effective, requires that the valve be installed at the "water in" side of the condenser. These strainers should be cleaned periodically.

A clogged strainer, incidentally, gives much the same indications as a clogged condenser. This periodic cleaning should include the cleaning of the water regulating valve.

Dirt deposits are usually fairly easy to clean out. The cleaning out of hard water scale is not always so simple. Water strainers and valves are best cleaned by scraping with a knife and brushing with a wire brush. They should then be lightly coated with light grease. Cleanable condensers can be cleaned with a wire brush or any other means that the particular manufacturer recommends.

Condensers, not classed as cleanable, can often be cleaned with chemicals. As these chemicals are often strong enough to attack metals, great care should be exercised in their use. It will probably be advisable to remove the condenser from the system for this type of cleaning to avoid possibility of getting the chemical and water into the refrigerant.

One method of cleaning may be of interest. The water inlet and outlet connections are disconnected at the condenser and any water is drained out of the condenser. A sufficient quantity of solution to fill the condenser is prepared by adding one part of commercial muriatic (hydrochloric) acid to four parts of water in an enameled or earthen crock. The solution is poured into the water tubes of the condenser and allowed to stand for 30 minutes. Occasional agitation or circulation of the solutions aids the action. At the end of the 30 minutes the solution is drained out, the water supply is immediately connected and the condenser flushed out with fresh water for five to 10 minutes.

In some severe cases it may be necessary to repeat this process. Care should be exercised as the acid attacks the metal to some extent. Repeating the process too frequently or failing to flush out thoroughly with fresh water may lead to a rupture between the water and refrigerant passages.

5. Dirt In the Motor

"Dirt in the motor" may coat the windings, and other heat dissipating surfaces, to such an extent that the heat is not carried away fast enough and the motor becomes overheated. In extreme cases dirt can block the air passages so that no air flows through them. The motor can sometimes be shielded from such dirt by, for example, building a wall between the condensing unit location and the boiler room causing the dirt.

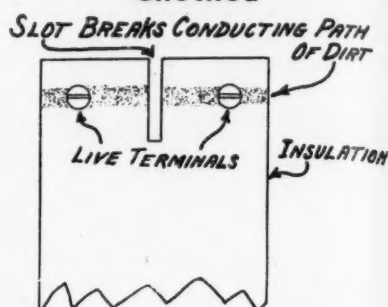
Totally enclosed motors are available for just this kind of service. Where such arrangements are not possible, a regular program for taking the motor apart for cleaning may be helpful. The attachments of a vacuum cleaner are very effective for this cleaning. Overheating of motors, due to dirt, appears to be a rather uncommon occurrence in air conditioning and refrigerating equipment.

In addition to overheating, dirt in a motor may cause other types of trouble. If it gets into the oil, the bearing temperature increases, bearings become worn, waste packing becomes clogged with the dirt, and bearing failure ultimately occurs. Most bearings are fairly dust tight so that, in many cases, a motor can be very dirty without any dirt getting into the bearings.

In single phase motors dirt can cause trouble with brushes, brush holders, centrifugal mechanisms, commutators, and commutator short circuiting devices. Dirt on insulation, such as a terminal board, may cause a short circuit or a ground. It may be possible to install a shield over the particular part involved so that the dirt will be deposited on this shield instead of on the surface of the insulation.

Another possible corrective meas-

Fig. 55—How Dirt Is Checked



Method of cutting a slot in the insulation so that dirt won't cause a short circuit.

ure is to cut a slot in the insulation as shown in Fig. 55, so that the dirt path cannot be completed to cause the short circuit. This slotting, or shielding, should be done with care to insure that the normal functioning of the motor is not affected.

For example, a shield may be installed in such a way that the flow of cooling air, through the motor, is seriously reduced. For the best results with back pressure controls, motor controls, belts, and air cooled condensers to be considered in addition to motors, it is recommended that everything possible be done to exclude the dirt from the refrigerating equipment location when dirt is a serious problem.

Distributor's Sales Double '40 Total During '41

ROCHESTER, N. Y.—Sales in 1941 exactly doubled those of 1940, for Kemp Equipment Co., distributor of Gibson home refrigerators, Bendix and Thor laundry equipment, and Quality ranges.

J. B. Kemp, president of the company, has kept showrooms open until late at night for the convenience of dealers left without demonstration models through the Christmas period, and it has been nothing unusual to sell a new refrigerator at 2:30 in the morning.

A line of sewing machines and kitchen accessories for dealers who wish to add these lines as a potential stop-gap against falling off of appliance deliveries, has been taken on by Kemp, who has twice reordered on both lines in a couple of months.

U.S. GOVERNMENT Specification

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For Kelvinator—Westinghouse & G.E. All Copper—Replaces Old Steel—Porcelain Units. Priced Moderately.

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For Information on Motors

FOR ALL TYPES OF
Air Conditioning and
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WRITE TO

Wagner Electric Corporation
6441 PLYMOUTH AVE.
ST. LOUIS, MO.

What's New

Descriptions of some of the brand new items for the refrigeration and air conditioning, and major appliance fields.

'Humidair' System For Steam Radiator Units

MILWAUKEE — Heretofore marketed chiefly in the Chicago and Wisconsin areas, the "Humidair" humidifier, manufactured by Skilbeck Mfg. Co. for use with steam radiators will be sold on a national basis by Marketing, Inc. here. Representatives and distributors will be appointed, and promotion and advertising campaigns started.

The humidifier consists of a valve and a drip plate. The valve is attached to the steam radiator in place of the usual vent, and is said to vent air, hold vacuum, and deodorize steam before diffusing it into the air. Surplus water is carried by tubing from the valve to a drip plate located in the heat of the radiator, where it is evaporated.

Suspended Unit Heater Discharges on 5 Sides

SYRACUSE, N. Y.—Designed for both industrial and commercial installations, a new suspended type unit heater providing heated air outlets in five directions—all four sides and the bottom—has been introduced by Carrier Corp. here.

Available with steam or hot water coils, the unit is equipped with independently adjustable louvers, permitting deflection of air streams for perfect coverage, it is claimed. Standard units have two outlets located on opposite sides with removable panels on the other two sides which can be replaced with outlets if desired.

The motor is housed in the unit,

but is in the entering cool air stream and is protected from the heating coils by a circular shield. Top and bottom of all units are finished in a new "tapestry" enamel.

High velocity and generating power of the five-way heater permit efficient heating from as high as 45 feet off the floor, it is claimed. Adequate heat is obtained as far as 120 feet from the unit in each direction, it is said.

Odor Absorber Made For Small Offices

NEW YORK CITY—A new Type "A" odor absorber, designed especially for use in homes, doctors' offices, small shops, reception and dressing rooms, etc., has been developed by the Dorex division of W. B. Connor Engineering Corp. The unit has a capacity of 100 c.f.m. Retail price is about \$50.

It comes in a streamlined enameled metal case with chromium trim, and can be used either as a portable or stationary model. It is 24 inches long, 10 inches high, and 10 inches wide, with a 40-watt motor, circulating fan, dust filter, and four carbon-filled canisters, which can be reactivated when saturated and used over and over. Small unit uses the same coconut shell carbon element as do larger Dorex units.

Frosted Food Cabinets Offered In 4 Sizes

CHICAGO—A new four-model line of fresh frosted food cabinets has been announced by Bastian-Blessing Co. The smallest unit, which occupies only 62 inches by 21 inches of floor space, provides storage room for 230 packages of fresh frozen food. Models range in size from 6 to 17.5 cu. ft.

Wire baskets and lift trays with handles which hold identification cards permit neat compact storage and quick service. Double faced, illuminated merchandiser boards carry colored advertising posters of fresh frozen foods ready to serve, with names and prices of varieties.

Cabinets are built with welded steel frames and faced with white baked enamel. Easy access to the condensing unit is accomplished by removing a slotted panel and pulling the unit out.

Device Cleans Electric Air Cleaner In Action

EAST PITTSBURGH, Pa.—A new and semi-automatic device for cleaning its "Precipitron" electrostatic air cleaners with a brief service interruption to only a small section at a time has been announced by Westinghouse Electric & Mfg. Co.

Development of the electrostatic precipitator to large units and its use in applications where it must not be shut down has created the serious problem of ridding the air cleaner of the mass of dirt which it traps. For example, in steel mills now running uninterruptedly to turn out defense materials the Westinghouse Precipitron that cleans ventilating air for vital motors cannot be stopped for maintenance.

A 100-cell array of Precipitrons is divided into five 20-cell sections. With the new cleaning device, each section to be cleaned is placed in front of one of these sections which is disconnected from the ventilation system and from the power supply.

The cleaner has a motor-driven carriage that sweeps slowly up and down in front of the dirty precipitator plates. The carriage has three horizontal rows of nozzles from which water, air, and oil are sprayed in turn over the plates. The operation then stops, having lasted about 30 minutes. All the operator needs to do is to start the cleaning unit and then return a half-hour later to move it to the next section.

Foster To Head Wiring Device Section of G-E

BRIDGEPORT, Conn.—After 40 years of service, J. C. Dallam has retired as manager of the wiring device section of General Electric's appliance and merchandise department. He is succeeded by T. D. Foster, who in addition to his new duties will retain his present position as manager of the accessory equipment section.

Mr. Foster joined the G-E wiring device section in 1924 and was made manager of the accessory equipment section upon its formation in 1928. He recently completed four terms as chairman of the flexible cord and cord section of the National Electrical Manufacturers Association. He is also a member of the wiring device section and fuse section of Nema.

Mr. Dallam's association with General Electric began in 1899, when he joined the drafting department.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted," 5¢ per word; minimum charge, \$2.50. Three consecutive insertions, 12½¢ per word; minimum charge \$6.25.

RATES for all other classifications, 10¢ per word, minimum charge, \$5.00 per insertion. Three consecutive insertions, 25¢ per word, minimum charge, \$12.50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

PAYMENT in advance is required for advertising in this column.

POSITIONS WANTED

ENGINEER—Industrial, Commercial Refrigeration, Summer-Winter Air Conditioning. Not subject to draft. Now employed, not on defense work, seeks more responsible position. Capable of research, sales, survey, layout, estimating and service-management. American, thirty years executive, sales and engineering experience on three continents. Box 1383, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

LABORATORY Test Engineer. Give education, training, experience, and salary expected in first letter. Box 1380, Air Conditioning & Refrigeration News.

AN EXCEPTIONAL Opportunity to the Engineer whose experience includes successful designing for production; whose background covers all phases of development work, and whose abilities have placed him in executive capacities, one of the outstanding appliance manufacturers offers an opportunity to become administrative head of its engineering department. The man we are seeking is probably now employed as a Chief Engineer, or as the assistant to the head of the Engineering Department of some large manufacturing organization. The compensation will be commensurate with the opportunity and the responsibilities. Write Box 1382, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

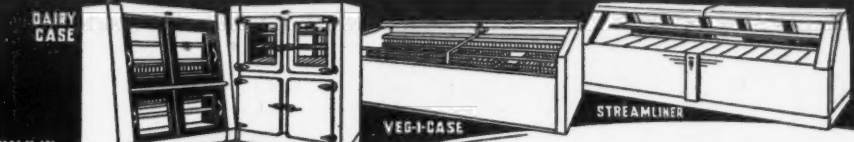
COMPLETE STOCK of Rebuilt Refrigerators all makes. Also "as is" Grunows, General Electrics, Frigidaires, Kelvinators, etc. Surplus stock new Westinghouse lowside complete with coils, valves, fans and manual controls. AC or DC mahogany, walnut or modern cabinets. Write for details. ASSOCIATED REFRIGERATOR PLANT, 3028 West Hunting Park Ave., Philadelphia, Pa.

EQUIPMENT WANTED

WE BUY defective thermostatic and automatic expansion valves, defective water valves and defective domestic and commercial cold controls. Give complete inventory and description of your stock. We will make an offer immediately. Box 1381, Air Conditioning & Refrigeration News.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.



Increase your Income the PERCIVAL way

Sell the "Dealer's Choice"—the line that's COMPLETE in model, size, purpose and price—the PERCIVAL LINE. Write for attractive money-making proposition.

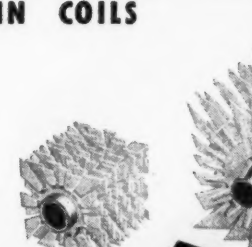
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Auto Dealers Seek Aid From Congress

CHICAGO—Help from Congress in solving some of the problems arising from curtailment of automobile production and the rationing of tires is sought in a resolution approved by delegates to the National Automobile Dealers Association convention here last week.

The action is interesting to dealers in other fields who may be similarly affected.

Enactment of four measures was asked in the resolution. These would:

Authorize the President to fix inventories of any article which he deemed strategic and necessary for the war effort, and give him the right to direct the distribution of "frozen" articles to the Army, Navy, and such other classes of purchases as he deemed proper.

Authorize the President to establish prices of "frozen" articles, including automobiles, at fair retail levels.

Provide for an agency, such as Reconstruction Finance Corp., to buy at a fair price upon demand from a merchant such articles as had been frozen.

Provide that merchants dealing in articles which had been frozen by the government might not be liable for damages on rental agreement under lease for their store premises. The dealers want relief from heavy rents.

Dealers also want the various orders now operative covering the sale of cars put into law for the period of the emergency. Delegates approved other resolutions having for their objective elimination of technicalities to make it easier to sell such cars as are available without conflicting with rationing plans.

\$10,000 Fine Asked For Priorities 'Chiselers'

WASHINGTON, D. C.—Drastic "civil and criminal remedies" to what he said investigations indicated were "widespread and serious" violations of priorities and allocations orders were recommended by Attorney General Francis Biddle last week in analyzing for the Senate judiciary committee the "second war powers" bill requested by the administration.

Investigations by the OPM, Mr. Biddle declared in a statement prepared for the committee, had established numerous violations of government priorities and allocations orders, which can be reached now only through "administrative sanctions." Such action might mean cutting off fuel and power to a plant violating such orders, he said, but shutting down a plant in this way would not facilitate war production.

The new bill would strengthen priorities by providing a fine of \$10,000 and imprisonment for one year as the maximum penalty for violators. This penalty provision, Mr. Biddle's statement said, had been asked by Donald M. Nelson, chairman of the War Production Board, who has power to make final decisions in all matters of production, purchase, and priorities.

Refrigeration Makes Biggest Gain In Dallas

DALLAS, Tex.—Sales of 12,539 electric refrigerators, with a retail value of \$1,755,460 were reported by Dallas dealers for the first 11 months of 1941, compared with 9,965 units, valued at \$1,793,700 in the same period of 1940.

Range sales for the 11 months amounted to 65 units, against 45 in 1940, with values being \$8,450 and \$6,750, respectively.

December sales in the Dallas area totaled 260 refrigerators, 8 ranges, 443 vacuum cleaners, 218 washers, 5 dishwashers and disposal units, 4 store coolers, 24 display cases, 14 water and beverage coolers.

11 Months	1941	1940
Refrigerators	12,539	9,965
Ranges	65	45
Water Heaters	9	9
Dishwashers	51	39
Room Coolers	44	61
Store Coolers	131	48
Display Cases, Etc.	274	248
Water, Bev. Coolers	458	188
Low Temp. Cabinets	57	96

Copper Fabricators Will Be Checked On Use of Metal

WASHINGTON, D. C.—A nationwide plant-by-plant survey of some 90 fabricators of copper is to be instituted immediately by the Priorities Compliance Section of the War Production Board, it was announced last week.

This inspection, the third to be conducted in the metals field, will be carried on by a force of attorney examiners of the Federal Trade Commission, who have received special training from the copper and zinc branch of the Compliance Section.

Investigators will confer with company officials, and make comprehensive studies of receipts of virgin copper and copper scrap and all deliveries and inventories, to determine whether the fabricators have been operating in compliance with priority orders.

It is anticipated that the inspection also will indicate the point at which vitally needed supplies of copper and scrap are escaping from military production channels.

'Less Essential' Uses Of Nickel Barred

WASHINGTON, D. C.—Loopholes in priority control of nickel, by which some secondary metal and nickel already in fabricators' inventories has been escaping into less essential uses were plugged last week with the issuance of Conservation Order M-6-b, which lists many items in which nickel cannot be used after April 1, 1942, and contains other restrictive provisions designed to conserve the metal for war production.

Use of the metal, except for "operational purposes," is prohibited in the manufacture of transportation equipment, plating, containers of all types, fire-fighting equipment, and lighting equipment. Where any other metal will serve, even though nickel is preferable, the substitute must be used.

Nickel cannot be used at all for the manufacture of plumbing, heating, and air conditioning supplies (excluding valve seats and thermostatic controls); building supplies, hardware, and ornamental metal work; decorative uses of all kinds; clothing accessories, jewelry, toilet articles, accessories, souvenirs, novelties, games, toys, art objects, and musical instruments; branding, marking, and labeling devices; photographic and art equipment and supplies; sporting goods and pleasure boat fittings, and saddlery and hardware harness and fittings.

Home and office furnishings and appliances and commercial and industrial appliances also come under the general prohibition, except for heating elements for replacement purposes or for use in the manufacture of electric ranges, portable heaters, and water heaters. The usual nickel-plated home electrical appliances are included in the prohibition.

Exceptions to the order are the usual ones of government orders, safety regulations, and priority ratings of A-1-k or higher.

Uses of nickel not specifically mentioned in the order are limited to OPM allocations of a specific amount of metal allocated for a definite purpose. Stocks on hand will be taken into consideration in making allocations, and secondary metal will be included in such inventory consideration.

United States is largely dependent upon Canada for nickel, that country producing 85% of the world supply. Nickel is one of the most important steel alloys, producing armor plate, projectiles, stainless and non-corrosive steel, and a variety of other products where hardness and resistance to corrosion and chemical action is important.

Net Profit of \$191,792 Reported By Curtis

ST. LOUIS—Curtis Mfg. Co. for the year ended Nov. 30, 1941, reports net profit of \$191,792, equal to 99 cents each on 193,365 shares of \$5 par common stock.

Steel Being Tried As Substitute For Copper In Many Refrigeration Uses

(Concluded from Page 1, Column 4) application of steel tubing, in small sizes, to various household refrigerator applications. Mr. Cox described Bundy steel tubing, made of fine grained steel sheets which are rolled and lapped in long lengths to 1/4 and 1/8-inch sizes. The sheets are brazed at the joint on a double lap, and are copper plated. The plating is said to be necessary to aid in the rolling process.

Tubing of this type, which is extensively used in automobiles and tanks, will stand any ordinary vibration, Mr. Cox said. It is easily formed with the proper tools, and Mr. Cox submitted samples of typical bends to the group to prove this point. Due to a difference in physical properties it may be necessary to change the form of the steel tubing in a refrigerator to eliminate vibration noise.

For flaring purposes steel is not as easily worked as copper and splits more easily under the impact of ordinary flaring tools. It is possible, however, to swedge steel tubing one wall thickness without damage, and make a joint in this way. The same flux is used as on copper tubing, but a cooler flame is required.

Steel tubing requires a protective coating of some kind, particularly when a refrigerator is in storage—and is not in use. As cadmium, zinc, and tin are automatically eliminated by shortages, paint should be used. Mr. Cox has found that an

air dried, dull black lacquer is suitable for this purpose, under normal conditions, but that baked paints made a more perfect seal.

Discussing the subject further, Mr. Craig pointed out that brazed joints on steel tubing would have to be made from virgin metal, so no paint could be applied at this point. He reported that the best way to protect this type of brazed joint was to cover it with rayon tape, then wet the tape with acetone. This would form a tight plastic coating over the joint which will stand 110° F. dry bulb temperature and 100% relative humidity.

E. J. Kimm of Kerotest Mfg. Co. called the attention of the group to three other kinds of tubing. One is a seamless steel tubing made in 10-ft. lengths. Mr. Kimm reported that he has seen this tubing in a jobber's warehouse, but did not know the source. He stated that its shortcomings were insufficient length, and the fact that it could only be bent once.

Another tubing, made with a spiral weld, is available through the Imperial Brass Mfg. Co., but Mr. Kimm did not report its characteristics.

He also described plastic tubing (Saran), stating that it would soften at high temperatures, and was quite brittle at low temperatures, so perhaps was not so readily adaptable to refrigeration service—but could be used for water lines.

Mr. Craig added that some work

was being done on the development of steel capillary tubes, and he saw no reason why they should not be successful.

G. E. Graff of Ranco, Inc., Columbus, Ohio, reported that his company was experimenting with steel tubes in manufacturing controls. He stated that tubes could not be "pinched off" to form seals at the end, but would have to be dipped in molten silver to get a proper seal. Mr. Graff also stated that while it was possible to use a steel power element in a refrigeration control, its useful life would be about one quarter that of bronze power elements.

It was the consensus of engineers present that copper will not be available to the refrigeration industry; that steel can be substituted for copper in most cases; and that plastic have not been, so far at least, satisfactory substitutes for copper.

Civilian Radio Output Reduced By Half

(Concluded from Page 1, Column 3) to smaller firms, the lighter curtailment ordered for them will permit them sufficient civilian production to keep their skilled labor force intact.

In addition to providing facilities for war work, the order will save an estimated 750 tons of copper, 100 tons of aluminum, and 3,400 tons of steel in the next 90 days, the Board stated. It is estimated that 60,000,000 radios are in use in 87% of American homes. During the first nine months of 1941, base period for the curtailment program, U. S. radio production totaled about 10 million sets.



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